ABSTRACT

UNACTIVATED OOCYTES AS CYTOPLAST RECIPIENTS FOR NUCLEAR TRANSFER

A method of reconstituting an animal embryo involves transferring a diploid nucleus into an oocyte which is arrested in the metaphase of the second meiotic division. The oocyte is not activated at the time of transfer, so that the donor nucleus is kept exposed to the recipient cytoplasm for a period of time. The diploid nucleus can be donated by a cell in either the G0 or G1 phase of the cell cycle at the time of transfer. Subsequently, the reconstituted embryo is activated. Correct ploidy is maintained during activation, for example, by incubating the reconstituted embryo in the presence of a microtubule inhibitor such as nocodazole. The reconstituted embryo may then give rise to one or more live animal births. The invention is useful in the production of transgenic animals as well as non-transgenics of high genetic merit.